

**MULTI-RESISTANT GRAM NEGATIVE BACILLI (INCLUDING  
 ESBLs AND ACINETOBACTER)**

**Infection Prevention and Control Policy No 23**

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Name of responsible committee/individual:	Infection Prevention and Control Committee/Director of Infection Prevention and Control
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## EXECUTIVE SUMMARY

### Scope of Policy

#### This policy applies to:

- All patients at LTHT.
- All staff employed at LTHT.

### Key Points

- Gram Negative Bacilli (GNBs) are commonly found in the gastro-intestinal tract, in water and soil. In hospitalised patients colonisation of the gastro-intestinal tract and oropharynx with GNBs is common.
- GNBs can be part of the transient flora on the hands of health care workers. **Hand hygiene is therefore essential in the prevention of spread.**
- Multi-resistant bacteria are seen more frequently in areas that have high usage of broad spectrum antibiotics and where patients have diminished immunity e.g. critical care and oncology units.
- GNBs commonly achieve antibiotic resistance by producing an enzyme (e.g. beta-lactamase) that counters the effects of specific antibiotics. Additionally, some GNBs contain powerful beta-lactamases (Extended Spectrum Beta Lactamases or ESBLs) that can destroy/inactivate even broad spectrum antibiotics such as cefuroxime and cefotaxime.
- A new class of ESBL has emerged and these have been widely detected among *Escherichia Coli* (E.Coli) bacteria. These ESBL producing E.coli are able to demonstrate resistance to both cephalosporin's and penicillin's and are usually found in urinary tract infections.
- The genes that confer antibiotic resistance can spread to other bacteria
- GNBs have been implicated in outbreaks of infection in intensive care units, neonatal and oncology units. They can cause urinary tract infections, pneumonia, surgical site infections and meningitis (in neuro-surgical patients).

#### Aims:

- To prevent and control the acquisition and transmission of GNB within LTHT

**Objectives:**

- For staff to understand the importance and significance of multi resistant GNB
- To assist staff to ensure that an appropriate risk assessment is performed
- To ensure that all staff are aware of and are able to apply the appropriate Infection Prevention interventions and procedures when caring for patients with multi resistant GNB

## 1 INTRODUCTION

There are many bacteria that are found in hospitalised patients. Not all are resistant to antibiotics and not all will cause serious illness. Species of bacteria commonly seen include *Escherichia coli* (*E. coli*), *Klebsiella*, *Proteus*, *Pseudomonas*, *Enterobacter* and *Acinetobacter* spp. collectively these bacteria are sometimes referred to as Gram-negative bacilli (GNBs). These bacteria, under certain circumstances can become resistant to antibiotics and may require infection prevention management.

(NB. *Acinetobacter* is a common environmental bacterium that lives in water and damp conditions but can survive in dust. It has minimal growth requirements, is capable of surviving for long periods in the environment and is relatively resistant to usual cleaning methods and drying). *Acinetobacter* is commonly found as a harmless coloniser of the skin of healthy people and usually poses very few risks to such individuals. However it can cause serious infections in patients who are immunocompromised. The most common *Acinetobacter* infections include pneumonia, bacteraemia (blood stream infections), wound infections and urinary tract infections.

## 2 PURPOSE

The purpose of this policy is to define the procedure to be followed after a patient is diagnosed with multi-resistant GNB.

**Failure to follow this policy could result in the instigation of disciplinary procedures.**

## 3 DEFINITIONS

A hospital transmissible infection is defined as one that can be communicated to staff and patients.

Alert organisms and conditions are those identified as posing a public health risk to patients, staff or visitors as defined by the Department of Health (DOH 1995).

Source isolation is the physical separation of one patient from another, in order to prevent spread of infection.

Colonisation is the presence, growth and multiplication of an organism without observable clinical symptoms or immune reaction in a patient.

## 4 DUTIES

### 4.1 Duties within the Organisation

As a healthcare establishment LTHT has a duty of care that is covered by the Health and Safety Act (1974) (HSE 2003), COSHH (HSE 2005) and The Health Act (DH 2006). The placement, movement and isolation of patients

with multi-resistant Gram Negative Bacilli are covered in core duties 2f, 3, 5, 6,8 and 10 of this Act.

## **4.2 Consultation and Communication with Stakeholders**

The Infection Prevention and Control Committee, the Chief Nurse Team and the Infection Prevention Team have commented on and contributed to this policy. The policy will be approved by the Infection Prevention and Control Committee and the Senior Management Team.

## **5 MANAGEMENT OF PATIENTS WITH MULTI-RESISTANT GNBs**

In many cases a patient may be colonised rather than infected with multi-resistant bacteria e.g. faecal carriage of multi-resistant GNBs. It should be noted that colonisation of a patient with an organism will not cause them harm; however action may be necessary to prevent spread.

## **6 WHAT DO YOU DO IF A PATIENT IS FOUND TO HAVE MULTI-RESISTANT GNB?**

A requirement for isolation may be suggested by a clinical presentation (e.g. presence of an “alert condition” such as diarrhoea/vomiting with unknown cause) or a microbiological result (e.g. isolation of an “alert organism” such as MRSA).

The need to isolate is based on whether the patient has a suspected or diagnosed alert organism or condition (refer to the new LTHT alert organism/condition policy).

If patients have a confirmed known multi-resistant GNB which is an alert organism, refer to LTHT Source Isolation Policy.

## **7 EXAMPLES OF RISK ASSESSMENTS (NB these are only examples – every case will need individual assessment)**

1. A patient with multi-resistant GNB in sputum who is coughing and expectorating would present a high risk of transferring the organism to others and will need to be nursed in source isolation whilst in the acute care setting.
2. A patient with multi-resistant GNB in urine who isn't catheterised and is continent with no symptoms is very unlikely to present a risk to others and would not need isolating except in very high risk areas e.g. ICU.
3. A patient who has a superficial wound infection which is leaking slightly and requires dressing presents a moderate risk to others and may be isolated depending on the clinical area e.g. isolation would be required in a “surgical” or critical care environment but not necessarily in a “medical” environment.

- **Outbreaks of multi-resistant GNBs have been linked to poor hand hygiene therefore staff should ensure they perform effective and appropriate decontamination of their hands after contact with patients or the patients environment. Patient hand hygiene is also very important and assistance should be provided for patients who are unable to perform this independently. (see LTHT Hand Hygiene policy).**
- Some GNBs in the environment are relatively resistant to cleaning. Patients who have been risk assessed as requiring Source Isolation management will also require an enhanced cleaning program (refer to Source Isolation Cleaning Policy).

## **8 RESPONSIBILITY FOR DOCUMENT DEVELOPMENT**

**Lead Director:** Ruth Holt, Director of Infection Prevention and Control

**Membership of the Steering Group:**

Amanda Whittaker

Gillian Hodgson

Richard Hobson

Consultation through Infection Prevention and Control Committee

## **9 EQUALITY IMPACT ASSESSMENT**

The Policy has been assessed for its impact upon equality, Appendix A. The Leeds Teaching Hospitals Trust is committed to ensuring that the way that we provide services and the way we recruit and treat staff reflect individual needs, promote equality and does not discriminate unfairly against any particular individual or group.

## **10 IDENTIFICATION OF STAKEHOLDERS**

The key stakeholders in this policy are staff involved in caring for patients with known or suspected infections and managers responsible for the provision of facilities for this patient group.

## **11 CONSULTATION PROCESS**

This policy will be consulted on by the Infection Prevention and Control Committee and its sub groups and the Chief Nurse Team.

## **12 APPROVAL AND RATIFICATION**

This policy will be approved by the Senior Management Team.

## **13 PROCESS FOR REVIEW/REVISION OF THIS POLICY**

This policy will be reviewed two years from the date of approval or following significant changes in the management of patients with known or suspected infection.

## **14 COMMUNICATION/DISSEMINATION OF THIS POLICY**

**Directors** – communication directly by e-mail and discussion at Senior Management Team meetings.

**Senior operational and corporate managers** – communication directly by e-mail and to be notified by Directors through line management briefing

**All staff** – Trust communications channels including e-Bulletin

## **15 IMPLEMENTATION OF THIS POLICY**

This policy will be implemented immediately following dissemination.

## **16 PROCESS FOR MONITORING COMPLIANCE/EFFECTIVENESS**

Any time a patient cannot be isolated appropriately this must be recorded by clinical staff and communicated to the IPCT

Records of non-availability of single rooms and compliance with hand hygiene and high impact intervention audit compliance should be monitored by the Divisions and reported to the IPCC via the Divisional IPCC Group.

## **17 REFERENCES/ASSOCIATED DOCUMENTATION**

Mayhall C. G. (1999) Hospital Epidemiology and Infection Control. 2<sup>nd</sup> Edition, chapters 26 and 27. Lippincott, Williams and Wilkins, Philadelphia.

Samaha-Kfoury J. N. and Araj G. (2003) Recent developments in beta lactamases and extended spectrum beta lactamases. BMJ 2003;327:1209-13.

Health Protection Agency (2002) Extended Spectrum Beta Lactamases in Scotland – a timely reminder. Communicable Diseases Report 7<sup>th</sup> June 2002.

Working Party Guidance on the Control of Multi-Resistant Acinetobacter Outbreaks 22/05/06 [www.hpa.org.uk](http://www.hpa.org.uk)

Health Protection Agency. Antimicrobial Resistance and Prescribing in England, Wales and Northern Ireland, 2008. London: Health Protection Agency, July 2008

## Appendix A - EQUALITIES IMPACT ASSESSMENT

Section 1 Screening				
Does this policy or procedure impact on staff patients or public? S = Staff PA = Patients PU = Public  (enter below)	How relevant is the policy to achieving the duties under race legislation?  0 = none 1 = a little 2 = some 3 = very  (enter below)	How relevant is the policy to achieving the duties under disability legislation?  0 = none 1 = a little 2 = some 3 = very  (enter below)	How relevant is the policy to achieving the duties under gender legislation?  0 = none 1 = a little 2 = some 3 = very  (enter below)	Could this policy disadvantage any group due to Race, Disability or Gender?  R = Race D = Disability G = Gender N = None  (enter below)
S, PA, PU	0	0	0	N
Section 2 Assessing impact				
<b>Please specify in the relevant box any thing that you have included in the policy which helps to meet the Race Disability or Gender Equality Duties*</b>  <b>Please put NA if this is not applicable</b>	Race	Disability	Gender	
	The policy is inclusive and applies to all patients	The policy is inclusive and applies to all patients	The policy is inclusive and applies to all patients	

\* The equality duty is to eliminate unlawful discrimination and promote equality of opportunity and good relations between different groups.

## APPENDIX B - Checklist for the Review and Approval of Policy

To be completed and attached to the policy when submitted to the appropriate committee for consideration and approval.

	Title of document being reviewed:	Yes/No/Unsure	Comments
<b>1.</b>	<b>Title</b>		
	Is the title clear and unambiguous? Is it positively named in respect of the behaviour, actions, established position it seeks to achieve?	Y	
	Is it clear whether the document is a policy, guideline, protocol or standard?	Y	
<b>2.</b>	<b>Rationale</b>		
	Are reasons for development of the document stated?	Y	
<b>3.</b>	<b>Development Process</b>		
	Is the method described in brief?	N	
	Are people involved in the development identified?	Y	
	Do you feel a reasonable attempt has been made to ensure relevant expertise has been used?	Y	
	Is there evidence of consultation with stakeholders and users?	Y	
<b>4.</b>	<b>Content</b>		
	Is the objective of the document clear?	Y	
	Is the target population clear and unambiguous?	Y	
	Are the intended outcomes described?	Y	
	Are the statements clear and unambiguous?	Y	
<b>5.</b>	<b>Evidence Base</b>		
	Is the type of evidence to support the document identified explicitly?	Y	
	Are key references cited?	Y	
	Are the references cited in full?	Y	

	<b>Title of document being reviewed:</b>	<b>Yes/No/Unsure</b>	<b>Comments</b>
	Are supporting documents referenced?	Y	
<b>6.</b>	<b>Approval</b>		
	Does the document identify which committee/group will approve it?	Y	
	If appropriate have the joint Human Resources/staff side committee (or equivalent) approved the document?	N/A	
<b>7.</b>	<b>Dissemination and Implementation</b>		
	Is there a communications plan to identify how this will be done?	Y	
	Does the implementation plan include the necessary training/support to ensure compliance?	N	
<b>8.</b>	<b>Document Control</b>		
	Does the document identify where it will be held?	Y	
	Have archiving arrangements for superseded documents been addressed?	N/A	
<b>9.</b>	<b>Process to Monitor Compliance and Effectiveness</b>		
	Are there measurable standards or KPIs to support the monitoring of compliance with and effectiveness of the document?	Y	
	Is there a plan to review or audit compliance with the document?	Y	
<b>10</b>	<b>Review Date</b>		
	Is the review date identified?	Y	
	Is the frequency of review identified? If so is it acceptable?	Y	
<b>11</b>	<b>Overall Responsibility for the Document</b>		
	Is it clear who will be responsible for	Y	

	<b>Title of document being reviewed:</b>	<b>Yes/No/Unsure</b>	<b>Comments</b>
	co-ordinating the dissemination, implementation and review of the document?		

**Individual Approval**

If you are happy to approve this document, please sign and date it and forward to the chair of the committee/group where it will receive final approval.

Name		Date	
Signature			

**Committee Approval**

If the committee is happy to approve this document, please sign and date it and forward copies to the person with responsibility for disseminating and implementing the document and the person who is responsible for maintaining the organisation's database of approved documents.

Name		Date	
Signature			